

FEBRUARY, 1908

Issued Every Month

With Free Distribution to all Users
of Machine Tools

HITCHCOCK'S
**MACHINE
TOOL LIST**

A Reference Book for Buyers
of Iron Working Machinery

Published by
A. H. HITCHCOCK
Hitchcock Machine
Chicago

The Difference Between a Good Clutch

Like the NUGENT Clutch

and a half-way clutch (as some really are, without naming them) is **more than money.**

A GOOD CLUTCH

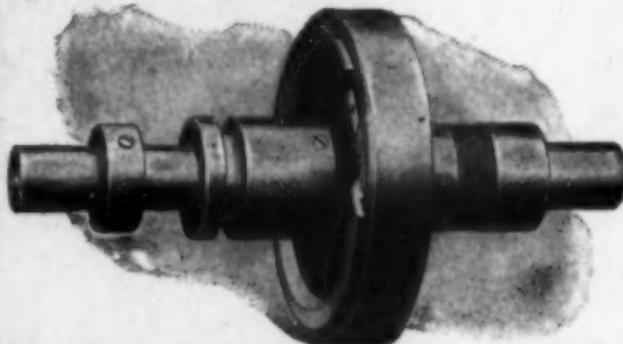
Like the NUGENT Clutch

1. **Doesn't waste power**, for it transmits all the power of the belt, **and doesn't slip.**

2. Doesn't worry the boss, because it needs little attention. Oil it once a week and it will never squeal.

3. Doesn't make a grab at your fingers or arms if you have to do some work on the shaft near by.

Some of them do. We saw a big bunch of lever clutches being scrapped the other day in a modern factory. Why? Well, the price of a finger one of them tore off was more than the cost of a score of safe clutches. No chance to catch an arm or finger on the Nugent Clutch.



THE CINCINNATI IRON STORE CO.
CINCINNATI, OHIO
(The Nugent Tool Co., Builders)

Just Say "Hitchcock's List."

When you write any of the people whose advertisements appear in Hitchcock's Machine Tool List, will you not kindly work into your inquiry somewhere a reference to the fact that Hitchcock put you next?

If you will just say "Hitchcock's List"—that will be all sufficient—just so the advertiser knows where you saw it.

That's all the way he can find out that the advertising he pays for does him any good.

MEMORANDUM OF MACHINERY WANTED

(THIS IS NOT AN ORDER)

Name

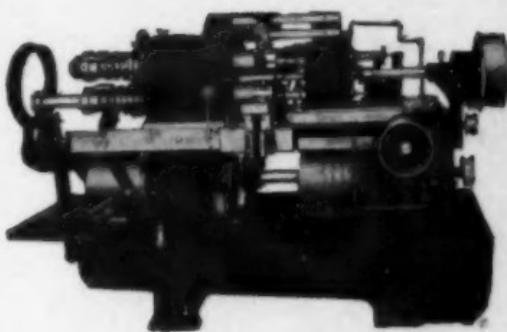
Address

We are in market for

If you do not find what you want advertised in HITCHCOCK'S MACHINE TOOL LIST, or if you wish to send an inquiry to all of its advertisers, note what you require on this slip and send it to the publisher, A. H. Hitchcock, Monadnock Block, Chicago. A copy of it will be forwarded to all advertisers in HITCHCOCK'S MACHINE TOOL LIST. Replies to such inquiries will come directly from the parties who have the articles wanted; not from the publisher, who is not in the machinery business.



— NAMCO —



ECONOMY

in its highest degree
for the manufacture
of

**DUPLICATE PARTS
FROM THE BAR**

IS THE USE OF
**THE ACME AUTOMATIC
MULTIPLE SPINDLE
SCREW MACHINE**

The National-Acme Mfg. Co.

CLEVELAND, O.

NEW YORK BOSTON CHICAGO



— NAMCO —



Here's Our New Lathe

With
Three-
Step
Cone
and
Double
Back
Gears

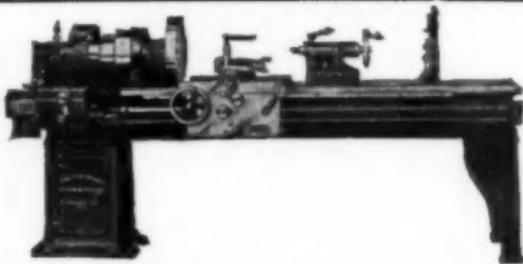


A lathe of exceptional interest to manufacturers whose requirements are exacting.

Built to meet high-speed conditions on either light or heavy work. Eighteen spindle speeds, eight more than the usual five-step cone, and twice as much power, with positive geared feeds for every possible variety of work, all at the instant command of the operator. A cost reducer of unusual efficiency.

Let us tell you ALL its merits

The Springfield Machine Tool Co.
633 Southern Ave., Springfield, Ohio

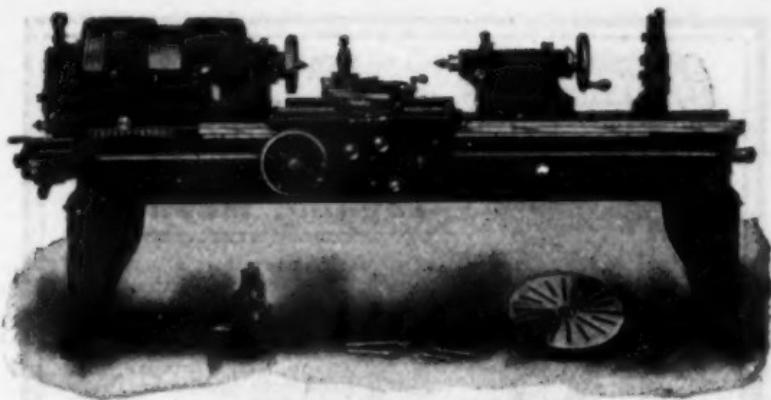


The 16 in. Cincinnati Lathe

has extra wide three-step cone and double back gears. Our quick change gear device for cutting screws permits changing instantly without removing a gear.

It pays to know all about them

THE CINCINNATI LATHE & TOOL CO.
CINCINNATI, OHIO, U. S. A.



18 INCH PATENT HEAD LATHE.

The Reason Why

you would select a CONE HEAD LATHE for certain work:

FINISHING CUTS

The Reason Why

you would select a GEARED HEAD LATHE for other work:

POWER for ROUGHING CUTS and SPEED CHANGES without belt shifting

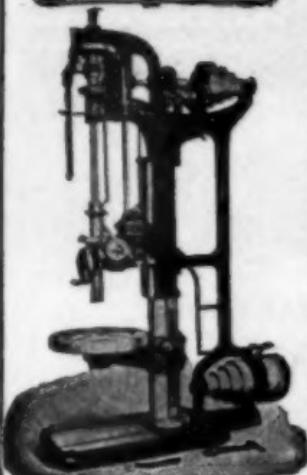
Are the Reasons Why

you should select the PATENT HEAD LATHE.

Six open belt speeds for finishing.
Twelve back gear speeds for roughing.
A wide belt which is never shifted,
and no belt pull on the spindle.

**THE LODGE & SHIPLEY
MACHINE TOOL CO.
CINCINNATI, OHIO**

CINCINNATI



HEAVY PATTERN Upright Drilling and Tapping Machines

are guaranteed the heaviest, strongest, most convenient and accurate drills made. Strictly the machines for the shop looking, not for first cost only, but for machines without repairs, and result and profit producers.

These are facts concerning the **Cincinnati Drills**, and more is said in the catalog.

Immediate deliveries.

Remember we are the originators, not copyists, of the modern Upright Drilling and Tapping Machines.

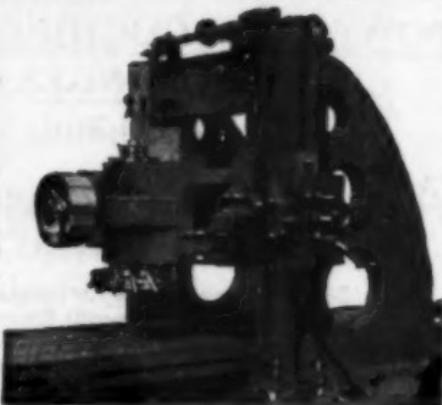
CINCINNATI MACHINE TOOL CO.
Township & Valley Sts., CINCINNATI, OHIO

Milling on the Planer

THE **FARWELL** MILLER

can be attached to any planer and can be operated with vertical, horizontal or angular spindle. 4 sizes.

Catalog 56



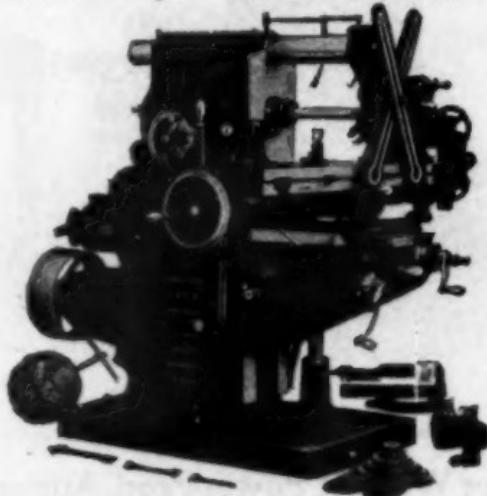
The Adams Company,
Dubuque, Iowa

**A LITTLE MORE WORK
AT A LITTLE LESS COST**

In Accomplishing this Result

The "Milwaukee" Miller

helps to increase the profits in every line of manufacture in which the machining of iron and steel is a part of the work required.

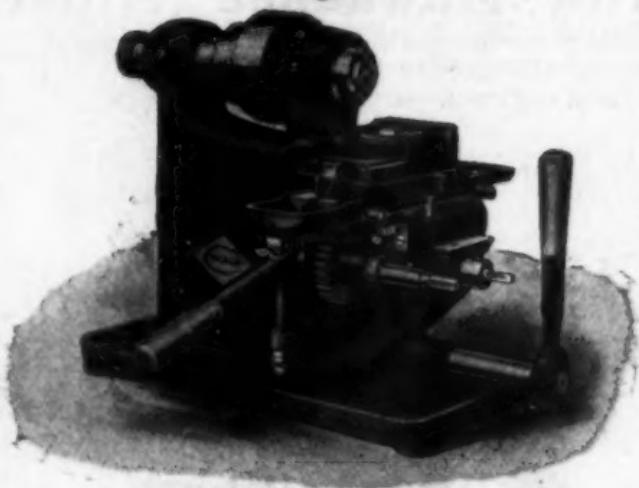


Ease and quickness of adjustment, the power to take heavy cuts, exactly the right feed for each piece of work—these are three of the leading factors contributing to its success as a tool of exceptional economy and convenience. This service quality is inherent in the design of the "Milwaukee" Miller; it is brought out and made effective by unusual care in building and testing each machine, which explains why those who know the money-saving power of this tool keep us busy supplying the demand.

Do you know it? If not, let us give you a few examples of what it is doing every day. They may suggest some possibilities of economy in your work.

You'll find the information worth asking for

Kearney & Trecker Co.
318 Reed St., MILWAUKEE, WIS.



A BENCH MILLER

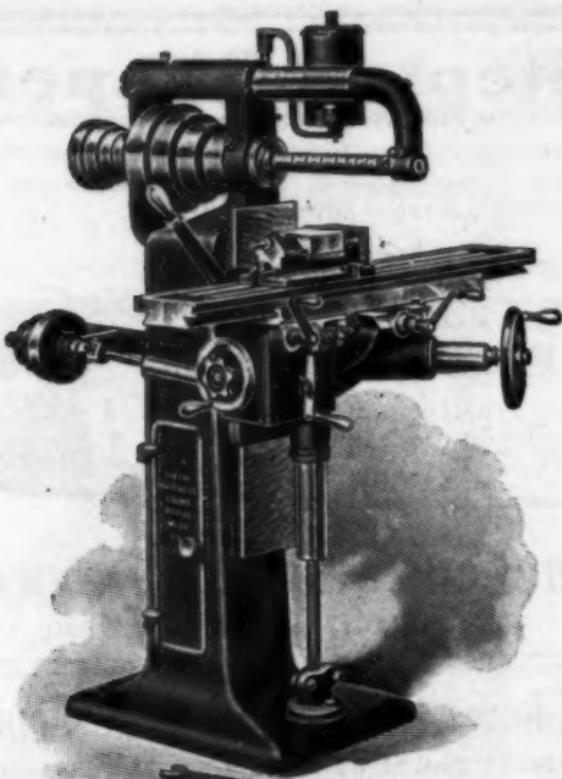
With or Without Power Feed, Automatic Stop, Draw Bar, Collet and Sleeve, Quick-Acting Vise and Two-Speed C. S.

INVALUABLE TO

Lock Manufacturers
Electrical Workers
Typewriter Manufacturers
Watch and Clock Makers

Circulars on Request

Chicago Machine Tool Co.
12 S. Canal St., : Chicago, Ill.



FOX MILLERS

PROMPT DELIVERY

Hand or Combined Hand and Power Feed

No. 3½, shown above, has hand rack feed, combined with either hand or power screw feed, all instantly interchangeable. It is back geared, or not, as desired. Its range is 24x6x14½ in. Get a catalogue, with complete description.

*Sensitive Drills—Polishing Stands—Tube
or Pipe Cutters—Pattern Shop Equipment*

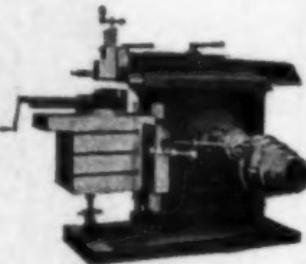
FOX MACHINE CO.
225 N. Front St., Grand Rapids, Mich.

Steptoe Shapers

Compare the many time-saving features of our machine with those of any high class shaper, and you will willingly admit that the

— NEW — “STEPTOE” FEATURES

have greatly increased the possibilities in shaper work.

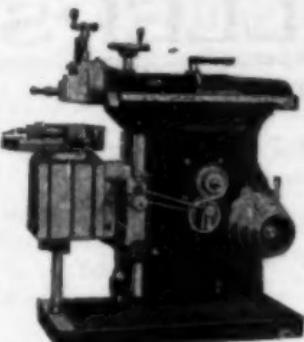


— ADDRESS —

THE JOHN STEPTOE SHAPER CO.
Station B, Cincinnati, Ohio

“Cincinnati” BACK GEARED Crank Shapers

**HAVE THE POWER FOR SEVEREST SERVICE
WITH THE NECESSARY RIGIDITY**



No. 1610—16 in. Back Geared Crank Shaper.

Power: The gearing is arranged to make them the most powerful shapers of their stroke on the market.

Rigidity: From the smallest part to the finished tool, these shapers are designed and constructed to provide the strength and rigidity necessary to withstand the strain of the hardest work—always with that comfortable margin which means the best wear under hard conditions.

Our free Shaper Book tells all about their construction
Are you interested?

THE CINCINNATI SHAPER CO.
Colerain Ave. & Elam St., CINCINNATI, O.

\$60 SAW

Cuts 3x5 or $\frac{1}{2}$ x9 in.
Power Friction Feed
Automatic Knockout
Large Clamping Table

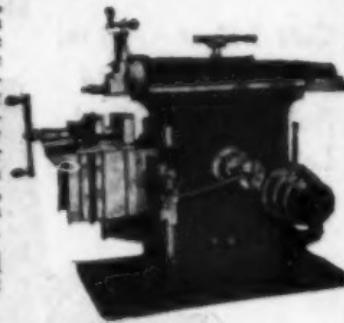


The Burke Machine Co.
3500 Perkins Ave., Cleveland, O.

A TOOL FOR SERVICE

The Kelly 26 in. Back Geared Shaper
with Automatic Table Support

A shaper of exceptional power, accuracy and durability, that from the standpoint of results is the most economical in market. The product of a plant devoted exclusively to building shapers, they lack no merit that skill and experience can put into them; they are guaranteed to stand up under heaviest duty. Can be thrown from single to back gear, or vice versa, without stopping, by means of a clutch controlled with handy lever, there being no gears to be stripped. Patented table support raises and lowers with the table, keeping it absolutely rigid at any point.

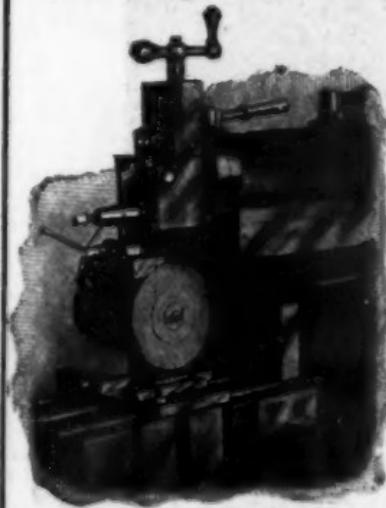


*No fads or frills, but the maximum
of honest value at reasonable cost*

THE R. A. KELLY CO.

700 to 800 Market Street, XENIA, OHIO

Willey Electric Grinders



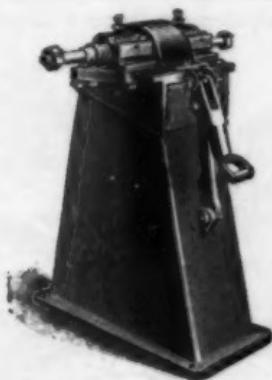
For Centers and
Surface Work
**Practical
Economical
Convenient**

Cut shows it attached to the tool post of a shaper, for surface grinding. Can be used on a planer in the same way, on a lathe for centers, shafts or internal grinding, on a miller for grinding cutters in place —anywhere, in fact, doing many things as well and cheaply as a universal grinder. Saves lots of time and trouble.

Also
Electrically Driven Hand
and Breast Drills

James Clark, Jr., Electric Co., (INCORP.-
ORATED) Louisville, Ky.

STARTED OR STOPPED IN TWO SECONDS



YOU don't have to struggle with a belt, and then wait minutes for your wheels to stop, when you want to change wheels on the Whitney Jack: Just raise the lever, and in two seconds the wheel is at rest. Wheel changes are easily made, and a depression of the lever brings wheel to speed instantly.

Fifteen to thirty minutes saved every day would mean dollars to you.

And there are a host of other good points you should know about.

Send for Bulletins

THE NEW BRITAIN MACHINE CO.
60 Chestnut St., NEW BRITAIN, CONN.

"1908 PATTERN"

INDEPENDENT LATHE CHUCK



New and up to date.

*The most convenient independent
chuck on the market.*

Jaws are easily reversed.

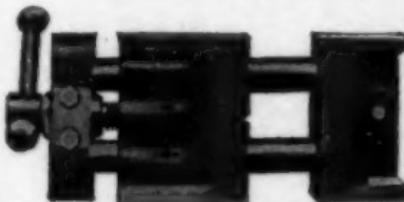
1907 Price List and Circulars on Request

THE SKINNER CHUCK CO.

90 N. Stanley St., New Britain, Conn.

94 Reade Street, New York City

THE REQUIREMENTS OF
A Good Drill Press Vise



It should be light as is consistent with necessary strength, so it can be easily and quickly handled. It should have provision for holding round pieces, both vertically and horizontally. Base and edges should be

finished square with each other, so holes can be drilled at right angles by merely setting the press on edge. It should be so made that the drill passing through the work cannot injure the vise. There should be no lodging places for chips or oil, and no loose parts to be removed or attached with bolts and screws. It should have no extra or special handle not permanently attached.

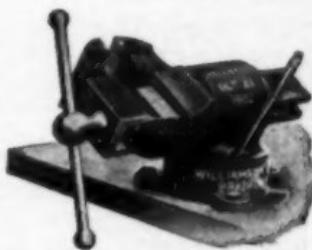
The **Titus Drill Press Vise** meets these requirements in every particular, and it is the only one that does.

Shall we send you one on thirty days' trial?

TITUS MACHINE WORKS
MARION, OHIO

A TIME SAVER

Enables your bench man to spend his time on his work instead of puttingter with his vise



Every minute used in clamping and unclamping a piece of work in order to get it into the right position—a position obtained with a Williamson Vise instantly and without effort—is wasted time that costs you real money; you put it in the man's envelope every Saturday night. And still more time is lost with an ordinary vise because the best position in which to do a cer-

tain thing may not be obtainable at all. Watch one of your bench hands, and note how much easier and faster he could work if he could turn his job completely around horizontally and then completely around vertically, all in a few seconds; the economy in using the Williamson will be demonstrated beyond question.

To waste time is wicked; don't be wicked any longer

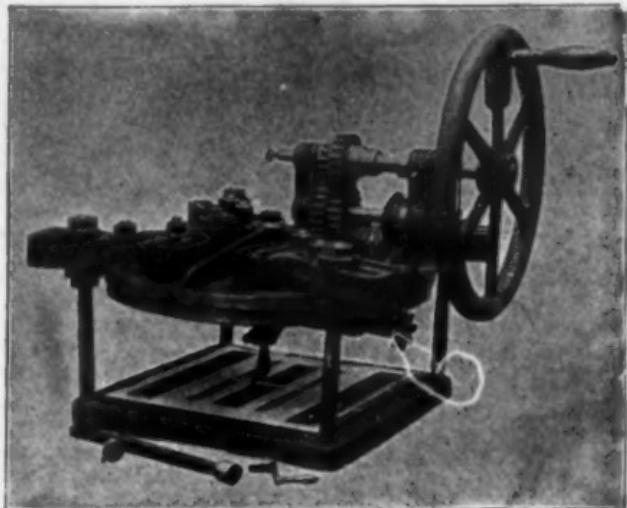
WILLIAMSON VISE CO., :: Bradford, Pa.

Special bases for use on planers, shapers, drill presses, millers, etc.

PORTABLE TOOLS

FOR REPAIR WORK IN PLACE

They make an immense saving in the cost of repairing large engines, pumps, compressors and other machines, and in time taken to do the work.



Rotary Valve Seat Planing Machine.

Faces off worn valve seats so smoothly and accurately that no filing or scraping is needed. Port edges are not broken, and the work is in all respects as perfect as if done in the shop. This tool, which is made in several sizes, will plane any surface 42 inches or less in diagonal measurement, and is supplied with swiveling and adjusting radial arms that enable it to be readily attached to almost any shape. Indispensable in railway shops, and a money earner on all kinds of repair work.

Portable Machine Tools of All Kinds

For boring, milling, radius planing, facing, turning, etc., devices which often pay for themselves in the saving they make on a single job.

Our Catalogue describes them. May we send you one?

L. B. Flanders Machine Works (Est. 1870)

H. B. UNDERWOOD & CO., Props.
1022 Buttonwood St., Philadelphia

Second-Hand Machinery.

Lists of second-hand machinery, either for sale or wanted, will be published under this heading at the rate of **40 cents a line**, across the page, each issue, with a minimum charge of **\$4.00**. Sub-headings are counted as one line, but the name and address of advertiser are not included in the space charged for. Prices and full descriptions of the machines listed will be furnished by the parties offering them for sale. If you do not find what you require, use the slip inclosed with each book to make known your wants to the publisher.

FOR SALE BY

Perkins & Frecker, . . . 136 Liberty St., New York, N. Y.

LATHES.

16 in. x 6 ft., Reed, plain rest.	20 in. x 8 ft., McMahon, cp. rest, ck.
16 in. x 6 ft., Reed, plain rest, taper.	21 in. x 6 ft., Fifield, compound rest.
16 in. x 6 ft., Flather, pl. rest, chuck.	24 in. x 12 ft., Fifield, comp. rest.

TURRET LATHES AND SCREW MACHINES.

2x24 in., Jones & L., triple gd. head.	1 in., Pratt & Whitney, wire feed
21 in., Windsor, friction head, power	screw machine.
feed to turret.	1 in., Dreses, turret lathe.

MISCELLANEOUS.

Shaper, 24 in., Hendey.	Grinder, wet tool, 20 in.
Miller, No. 7 Becker-B., Lincoln.	Hack saw, Star, power.

FOR SALE BY

The Buckeye Equipment Co., . . . 75-77 Elm St., Cincinnati, O.

ELECTRIC MOTORS—DIRECT CURRENT.

1 h. p., 220 volt, Barriett. \$35.	2 h. p., 500 volt, Triumph. \$70.
1 h. p., 500 volt, Barriett. \$35.	2 h. p., 220 volt, Gen'l Electric. \$75.
2 h. p., 220 volt, Commercial. \$55.	5 h. p., 220 volt, Gen'l Electric. \$90.

ELECTRIC MOTORS—ALTERNATING CURRENT.

2 h. p., 60 cycle, 110 volt, General Electric. \$40.
3 h. p., 60 cycle, 220 volt, Wagner. \$100.
5 h. p., 60 cycle, 220 volt, Century. \$140.

GENERATORS.

10 k. w., 110 volt, Hobart. \$100.	18 k. w., 110 volt, Edison. \$150.
12 k. w., 110 volt, Edison. \$125.	25 k. w., 110 volt, Card. \$250.

A full line of new and rebuilt motors and generators of good standard make carried in stock. State your wants.

FOR SALE BY

O. L. Packard Machinery Co., . Chicago, Ill., and Milwaukee, Wis.

LATHES.

13 in. x 5 ft., Pratt & Whitney.	22 in. x 12 ft., American.
18 in. x 14 ft., Davis & Egan.	36 in. x 12 ft., Davis & Egan.
20 in. x 12 ft., New Haven.	

PLANERS.

24x24 in. x 5 ft., Pond.	36x36 in. x 10 ft., Pond, almost new.
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SHAPERS.

14 in. x 9 ft., dbl. table, travel'g head.	24 in., Lodge & Davis, geared.
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DRILLS.

3 ft., Bickford, plain radial.	5 ft., Cincinnati, full univ., radial.
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GEAR CUTTERS.

36 in., Brainard, automatic, spur and bevel gear.	
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MISCELLANEOUS.

Cut-off machine, 3 in., Hurlbut & R.	Grinder, drill, Washburn.
Die milling machine, Thurston.	
Engine, 6x8, center crank.	Index miller.

SECOND-HAND MACHINERY

FOR SALE BY

C. C. Wormer Mach'y Co., 94-96 W. Woodbridge St., Detroit, Mich.

LATHES.

- 12 in. x 5 ft., Fairbanks, comp. rest.
- 12 in. x 5 ft., Davis, comp. rest, new.
- 12 in. x 6 ft., Fairbanks, cp. rest, new.
- 13 in. x 6 ft., Miami, comp. rest, new.
- 14 in. x 6 ft., Amer., q. c. gears, new.
- 14 in. x 8 ft., Amer., q. c. gears, new.
- 16 in. x 6 ft., Le Blond, q. c. gr., new.
- 16 in. x 6 ft., American, new.

- 16 in. x 8 ft., Porter, new.
- 16 in. x 8 ft., Le Blond, q. c. gr., new.
- 20 in. x 10 ft., Le Blond, q. c. gr., new.
- 20 in. x 10 ft., Blaisdell.
- 24 in. x 12 ft., Le Blond, dbl. f. g., new.
- 28 in. x 14 ft., New Haven, c. r., new.
- 44 in. x 14 ft., Lobdell, plain rest.
- 60 in., Stevens, pulley lathe.

TURRET LATHES AND SCREW MACHINES.

- 11 in., No. 140 Wells, hand screw machine, new.
- 12 in., Warner & S., pl. head turret, with automatic chuck.
- 12 in., Warner & S., turret, with dbl. cut-off rest, new.
- 14 in., Warner & S., pl. head turret, with double cut-off rest, new.
- 14 in., Jones & L., turret, friction geared head.

- 14 in., No. 3 Foster & K., plain head turret, with double cut-off, new.
- 14 in., No. 3 Foster & K., plain head screw mach., with wire feed, new.
- 16 in., No. 4 Foster & K., plain head turret, with double cut-off, new.
- 16 in., Warner & S., pl. head turret, with automatic chuck.
- 18 in., American, universal, bk. gd., Fox turret.

RADIAL DRILLS.

- 2 ft., Fosdick, tapping attach., new.
- 2½ ft., Fosdick, tapping attach., new.
- 2½ ft., American, tap. attach., new.

- 3 ft., Fosdick, tapping attach., new.
- 3½ ft., American, tap. attach., new.
- 4 ft., American, tap. attach., new.

MILLING MACHINES.

- No. 2 Hissey, plain.
- No. 2 A Owen, universal, new.

GRINDERS.

- Style A Yankee drill.
- Bench, emery, 1 in. arbor.
- 15 in., No. 7 Barnes, new.
- 20 in., Etna, w. & l. feed, new.
- 20 in., Barnes, w. & l. feed, new.
- 20 in., Prentice, square base.
- 21 in., Cincinnati, tapping attach.

- No. 4 LeBlond, plain, new.
- No. 2 Kempsmith, universal, new.

DRILLS.

- 24 in., Cincinnati, tap. attach., new.
- 24-36 in., Special Cinci., t. a., new.
- 24 in., Hamilton, tap. attach., new.
- 28 in., Barnes, automatic stop, new.
- 34 in., Barnes, automatic stop, new.

MISCELLANEOUS.

- Anvils, 40 and 160 lb.
- Benches, coremakers', 36x36 in.
- Bench filer and hack saw, new.
- Bolt cutter, No. 12 Wells Bros., new.
- Bolt cutter, 18 in., Little Giant, new.
- Boring mill, 40 in., Dreses.
- Center grinder, Mueller, 6 in. wheel.
- Centering machine, No. 2 Whiton, single spindle.
- Chuck, combination, 18 in., 3 jaw.
- Chuck, combination, 24 in., 3 jaw.
- Chuck, combination, 36 in., 4 jaw.
- Chuck, independent, 18 in., 4 jaw.
- Chuck, independent, 24 in., 4 jaw.
- Cleaner, No. 27 Clipper, Ferrall.
- Cone oven, 24x24x50 in.
- Cornice brake, No. 8, imp. dbl. truss.
- Couplings, for shaft, 1 to 3½ in.
- Drilling and tapping mach., pulley.
- Exhaust head, 3 in.
- Eyelet machine, foot power.
- Feed mill, Monitor, 3 roller.
- Fire extinguishers, 75 dozen.
- Former and beader, No. 2 Bliss.
- Furnace, gas, No. 18-A Acme.

- Hangers, for line shafting.
- Lathe dogs, miscellaneous sizes.
- Milling mch vise, No. 4 LeBlond, pl.
- Pipe vise, 4 in., Saunders, adj.
- Press, No. 1 Cady, new pattern, pwr.
- Press, No. 2 Cady, new pattern, pwr.
- Pulleys, wood split, 3x3 to 36x12 in.
- Rivet setter, hollow, foot power.
- Scale, platform, No. 11 Fairbanks, 800 lbs.
- Scale, hopper, Fairbanks, 30,000 lbs.
- Shafting, 1 3-16 to 3 7-16 in. diam., and in all lengths.
- Shaper, 14 in., Steptoe, pl. crk., new.
- Shaper, 14 in., Walcott, gd. rack.
- Shaper, 16 in., Smith & M., sp. box.
- Shear, circle, 10 in., Niagara.
- Shear, squaring, 22 in., Niagara.
- Shop saw, No. 1 Q. & C.
- Slide rest, compound, 2½ in., cross fd.
- Soldering machine, 10x13 in.
- Sprue cutter, foot power.
- Swivel block, 7x12x5 in. high.
- Tumbling barrel, 16x24 in.
- Vises, machinists' and blacksmiths'.

Price, full description and photos on application.

SECOND-HAND MACHINERY

FOR SALE BY

C. C. Wormer Mach'y Co., 94-96 W. Woodbridge St., Detroit, Mich.

HORIZONTAL ENGINES.

5 $\frac{1}{2}$ x 6 $\frac{1}{2}$ in., Clark, center crank, auto.	9x12 in., Payne, center crank, auto.
5 $\frac{1}{2}$ x 7 in., Gem, right hand, auto.	9x14 in., Atlas, side crank, auto.
7x10 in., Lansing, right hand, auto.	10x12 in., Atlas, center crank, auto.
7x12 in., Rice, left hand, automatic.	10x12 in., Atlas, center crank, auto.
8x8 in., Buffalo, center crank, auto.	10x12 in., Brownell, automatic.
8x10 in., Clark, center crank, auto.	10x16 in., Brownell, right hand, auto.
8x10 in., Clark, c. c., with governor.	12x12 in., Phoenix, center crk., auto.
8x10 in., Ideal, center crank, auto.	13x18 in., Erie City, 4 valve, auto.
9x12 in., Atlas, center crank, auto.	16x32 in., Buckeye, right hand, auto.
9x12 in., Erie-Ball, center crk., auto.	20x24 in., Atlas, r. h. s. c., auto.

VERTICAL ENGINES.

3x4 $\frac{1}{2}$ x in., plain, with governor.	8x8 in., Marine.
6x8 in., plain, c. c., with governor.	9 & 15x9 in., Westinghouse, comp.
6 & 12x8 in., Marine, compound.	10 & 18x12 in., Erie-Ball, cross comp.

GAS ENGINES.

5 h. p., Milwaukee, gasoline.	35 h. p., New Era, with clutch.
16 h. p., Schleicher, gas.	50 h. p., Fairbanks-Morse.
15 h. p., Miami, gas.	50 h. p., Olds, gasoline.

HOISTING ENGINES.

5 h. p., No. 12 O. & S., vertical.	10 h. p., No. 5 O. & S., contractors.
7 h. p., No. 22 O. & S., vertical.	15 h. p., No. 70 $\frac{1}{2}$ O. & S., dbl. cyl.

HORIZONTAL BOILERS.

48 in. x 10 ft., with 3 in. tubes.	60 in. x 16 ft., with 3 $\frac{1}{2}$ in. tubes.
48 in. x 12 ft., with 3 in. tubes.	Wickes, water tube, 4 in. tu., 18 ft. lg.

VERTICAL BOILERS.

18 h. p., plain, with fixtures.	6 h. p., Clark, with fixtures.
2 h. p., plain, with fixtures.	8 h. p., plain, with fixtures.
4 h. p., plain, with fixtures.	10 h. p., plain, with fixtures.
5 h. p., plain, with fixtures.	12 h. p., plain, with fixtures.
6 h. p., plain, with fixtures.	14 h. p., plain, with fixtures.

SINGLE STEAM PUMPS.

2 $\frac{1}{2}$ x 1 $\frac{1}{2}$ x 2 in., Union.	5 $\frac{1}{2}$ x 3 $\frac{1}{2}$ x 7 in., Moore.
2 $\frac{1}{2}$ x 2 x 3 in., Worthington.	6x3 $\frac{1}{2}$ x 8 in., Marsh.
2 $\frac{1}{2}$ x 2 x 4 in., Deane.	6x4 $\frac{1}{2}$ x 8 in., Marsh.
4x2x6 in., Canton-Hughes.	7x4x7 in., Canton-Hughes.
4 $\frac{1}{2}$ x 2 x 6 in., Blake.	7 $\frac{1}{2}$ x 4 x 10 in., Marsh.
5x3x6 in., Marsh.	10x6x10 in., Knowles.

DUPLEX STEAM PUMPS.

4 $\frac{1}{2}$ x 3 x 4 in., Fairbanks-Morse.	6x4x7 in., Canton.
4 $\frac{1}{2}$ x 3 x 4 in., Canton-Hughes.	10x6x10 in., Worthington.
5x3 $\frac{1}{2}$ x 5 in., Advance.	16x8x18 in., Knowles.
5x3 $\frac{1}{2}$ x 6 in., Canton-Hughes.	16x10 $\frac{1}{2}$ x 10 in., Worthington.
6x4x6 in., Canton-Hughes.	20x6x18 in., Hughes.

POWER PUMPS.

1 $\frac{1}{2}$ in., Fulton, horiz., centrifugal.	2x4 in., Blackmer, rotary.
2 in., Fulton, horizontal, centrifugal.	4x4 in., Blackmer, rotary.
2 $\frac{1}{2}$ in., Fulton, horiz., centrifugal.	6x6 in., Blackmer, rotary.
3 in., Fulton, horizontal, centrifugal.	8x8 in., Blackmer, rotary.
4 in., Fulton, horizontal, centrifugal.	1 $\frac{1}{2}$ x3 in., Rumsey, triplex geared.
4 in., Fulton, vertical, centrifugal.	4x6 in., double vacuum pump.
5 in., Fulton, vertical, centrifugal.	10x12 in., Knowles, condenser.

FEED WATER HEATERS.

29 h. p., American, closed.	200 h. p., American, copper coil.
30 h. p., American, copper coil.	250 h. p., Munn, horizontal, closed.
60 h. p., Monitor, purifier & filter.	400 h. p., Colles, vertical, open type.
175 h. p., Webster, purifier & filter.	450 h. p., closed type.

Air Compressors, Tanks, Pressure Blowers, Boiler Trimmings, etc.

Prices and full description on application.

SECOND-HAND MACHINERY

FOR SALE BY

Marshall & Huschart Machinery Company,

62-66 S. Canal St., Chicago. 109 Kentucky Ave., Indianapolis.
908-910 North Second Street, St. Louis.

BORING MILLS.

Baker Bros., vert. drilling and boring.	30 in., Bullard, gr. fd., pl. table, new.
No. 1 Barrett, horizontal.	42 in., Standard, 1 swivel and 1 turret head, new.
No. 3½ Binsse, horizontal.	86 in., Bullard, 2 swivel heads, new.
16 in., Baker Bros., cylinder, new.	

DRILLS.

2 spindle, Barnes, 16 in. gang.	26 in., Barnes, sta. hd., bk. gd., p. fd.
4 spindle, Garvin.	4 ft., Niles, plain radial.
4 spindle, Reddington, sensitive, 3 drill chucks.	4 ft., Universal Radial Drill Co., radial, plain.
24 in., sliding head, back geared.	4 ft. arm, Alfred Box, radial.

GEAR CUTTERS.

22 in., Gould & Eberhardt, hand.	36 in., Gould & E., spur gears only.
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GRINDERS.

Barr, complete.	10x30, Morse.
No. 164 Greenfield cutter, swivel hd.	12x42, Landis, universal.
Cutter and reamer, Gleason, auto.	16x10 ft. table, special surface.
8 in., Heald, ring and surface.	20 in., Northampton, water.
8x26, plain, diamond roll.	

PULLEY AND AXLE LATHES.

26 in., Stevens, pulley.	Bement, axle.
36 in., Stevens, pulley.	Pond, axle.
36 in., Niles, pulley.	

LATHES.

7 in., Stark, watch toolmakers', 18 in. between centers.	24x12, Lodge & S., 5 step cone, cp. r.
16x6, Lodge & S., compound rest.	24x16, Lodge & S., patent head, new.
16x6, Blaisdell, hollow spde., comp. rest, 2 chucks.	25x25, Blaisdell, pl. gd. rest, chuck.
16x8, Perkins, plain rest, chuck.	28x16, Harris, plain elevating rest, solid spindle.
18x8, Lodge & Davis, comp. rest.	30x20, turning lathe, compound rest.
20x14, Sebastian, pl. rest, hol. spde.	32x16, New Haven, compound rest.
22x12, Perkins, compound rest, power cross feed.	32-36x22, Putnam, compound rest.
	32x18, Fitchburg, comp. rest, new.
	38x18, Fifield, triple geared.

MILLERS.

No. 2 Cincinnati, plain, all feeds, new.	No. 2 Le Blond, universal.
No. 2 Cincinnati, plain.	No. 8 Whitney, hand.

PLANERS.

14 in., Industrial Works, trav. head.	24 in., Lodge & Davis, shifting belt.
16 in., Steptoe, triple geared.	24 in., Gould & E., b. g., shift. belt.

SCREW AND TURRET MACHINES.

1 in., Garvin wire feed screw mach.	2 in., Jones & Lamson turret lathe.
1 in., Cleveland auto. screw mch.	42 in., New Haven turret lathe.
16 in., Pratt & W. screw machine.	48 in., Gisholt turret lathe.
No. 1 Brown & S. auto. screw mch.	No. 2 Bardons & Oliver turret lathe, new.
No. 0 Bardons & O. screw machine.	No. 4 Windsor turret lathe.
No. 5½ Bardons & O. screw machine.	

MISCELLANEOUS.

Bolt cutter, 1½ in., National.	Keyseater, 2 in., Morton.
Bolt cutter, 1½ in., Putnam, single.	Notching press, 36 in., Ferracute.
Bolt cutter, 1½ in., Reliance, new.	Pipe machine, 2 in., Jarecki.
Cold saw, 22 in., Espen-Lucas.	Pipe machine, 3 in., Bignall & K.
Cutting-off machine, No. 2 Hurlbut & Rogers.	Press, No. 75 Toledo.
Hammer, 100 lb., Bradley, upr., helv.	Press, Ferracute, style D-23.
Hammer, 1,100 lb., fric. board drop, overhead works.	Profiler, Ames, 2 spindle.
	Punch, No. 0 Rudolph & Krummel.
	Tapping mach., 2 in., Hubbell, horiz.

SECOND-HAND MACHINERY

FOR SALE BY

Prentiss Tool & Supply Co., New York, Boston, Buffalo, Syracuse.

LATHES.

- 12 in. x 5 ft., Reed, comp. rest, power cross feed, hollow spindle.
- 12 in. x 6 ft., Le Blond, comp. rest, power cross feed.
- 14 in. x 6 ft., Lodge & S., compound rest, power cross feed.
- 15 in. x 8 ft., Prentiss Bros., rise and fall.
- 16 in. x 8 ft., Perkins, comp. rest, power cross feed.
- 18 in. x 8 ft., Pratt & W., comp. rest.
- 20 in. x 14 ft., Prentiss, comp. rest, power cross feed.
- 24 in. x 14 ft., Lodge & Shipley, trip. geared.
- 28 in. x 10 ft., New Haven, cp. rest, power cross feed.
- 31 in. x 10 ft., Putnam, comp. rest, power cross feed.
- 33 in. x 12 ft., Putnam, comp. rest, power cross feed.
- 33 in. x 26 ft., Putnam, comp. rest, power cross feed.
- 16-32 in. x 8 ft., Fay & S., ext'n gap.
- 26-44 in. x 18 ft., McCabe, dbl. spidle.
- 48-56 in. x 14 ft., Michaels, triple gd.

PULLEY LATHES.

- 26 in. and 50 in., Stevens.
- 60 in. x 10 ft., New Haven.

MILLERS.

- Nos. 1 and 2 Pratt & W., hand.
- No. 3 Kempsmith, hand.
- No. 2 Fox, hand.
- No. 2 Kempsmith, plain.
- No. 14 Garvin, plain, geared feed.
- No. 2 Cincinnati, plain.
- No. 1 Kempsmith, plain, gd. feed.
- No. 3 Cincinnati, plain.
- No. 3 and 4 Brown & S., plain.
- No. 1 Brown & Sharpe, universal.
- No. 3 Cincinnati, universal.
- No. 6 Van Norman, duplex.
- Nos. 22 and 24 Garvin, vertical.
- No. 5 Becker-B., vert., with rotary.

DRILLS.

- 14 in., Slate, sensitive, 1 and 2 spidle.
- 14 in., Sigourney, sensitive, 2, 3 and 4 spindle.
- 20 in., Aurora, power feed.
- 24 in., Gang, radial.
- 25 in., Gould & Eberhardt, sliding head, complete.
- 28 in. and 31 in., Barnes, sliding hd., complete.
- 32 in., Snyder, sliding hd., complete.
- 34 in., Barnes, sliding hd., complete.
- 36 in., Prentiss Bros., radial.
- Nos. 1, 2 and 3, Bickford, pl. radials.
- Nos. 1 and 2, Bickford, univ. radials.

SHAPERS.

- 15 in., Juengst, back geared.
- 16 in., Gould & Eberhardt.
- 48 in., Morton, draw stroke.

BORING MILLS.

- Warner & Swasey, horizontal.
- 34 in., Colburn, turret head.
- 38 in., McCabe, 1 head.
- 51 in., Niles, 2 heads.
- 12 ft., Niles, 2 heads, motor.

GEAR CUTTERS.

- No. 1 Whiton, spur and bevel.
- 30 in., 33 in. and 36 in., G. E., auto.
- 18 in. and 24 in., Brown & Sharpe.
- 24 in., Gleason, bevel gear planer.

PRESSES.

- No. 6 V. & O., inclinable.
- Nos. 18 and 20, inclinable.
- No. 4 V. & O., geared.
- No. 6 R. & K., geared, extra heavy.

PLANERS.

- 20x20 in. x 4 ft., New Haven, 1 head.
- 22x22 in. x 5 ft., Farrell, 1 head.
- 26x24 in. x 6 ft., Ferris & Miles.
- 30x30 in. x 8 ft., Smith & Silk.
- 32x32 in. x 8 ft., Gray, 1 head.
- 53x36 in. x 14 ft., Cincinnati.
- 50x36 in. x 14 ft., Pond, 2 heads.

SCREW MACHINES AND MONITORS.

- 7-16 in., Pratt & Whitney, wire feed.
- 8 in., Pratt & Whitney, wire feed.
- 10 in., Warner & Swasey, wire feed.
- 1 in., Garvin, wire feed.
- 14 in., Bardons & Oliver, wire feed.
- 2 in., Windsor, wire feed.
- 2x24 in., Jones & Lamson, flat turret.
- 18 in., Spencer, double end, auto.

HAMMERS.

- 60 lb., Bradley, helve.
- 175 lb., Beaudry, trip.
- 100 lb., 800 lb. and 1,200 lb., board drop.

MISCELLANEOUS.

- Cutter grinder, No. 1 Cinci., univ.
- Cutting-off machine, 2 to 6 in.
- Keyseater, No. 1 Davis.
- Pipe machine, 4 in., Saunders.
- Riveter, 4 in., Shuster.
- Surface grinder, Walker, automatic.
- Tool grinder, Gisholt, universal.

SECOND-HAND MACHINERY

FOR SALE BY

The H. A. Stocker Machinery Co., 20-22 S. Clinton St., Chicago.

LATHES.

- 17 in. x 8 ft., Flather, cp. rest, A-1.
18 in. x 8 ft., Le Blond, cp. rest, A-1.
24 in. x 12 ft., L. & D., t. a., motor dr.
24 in. x 12 ft., New Haven, cp. rest.
22 in. x 16 ft., Fay & Scott, cp. rest.
32 in. x 17 $\frac{1}{2}$ ft., New Haven.
36 in. x 18 ft., Putnam, comp. rest.

- 42 in. x 18 ft., Niles.
48 in. x 21 ft., Putnam, t. b. g.
54 in. x 20 ft., New Haven, t. b. g.
24 in., turret, Davis, set-over turret.
24 in., turret, Foster-Kimball, 5 in. hole in spindle.
20 small lathes, various makes.

PLANERS.

- 20x20 in. x 5 ft., Pratt & Whitney.
24x24 in. x 5 ft., Powell, good order.
24x24 in. x 6 ft., Cinci., good as new.
26x26 in. x 8 ft., Lodge & Davis.
36x36 in. x 8 ft., Ohio M. T. Co., 1 hd.

- 32x32 in. x 14 ft., Flather, o.s.a.t., 2 hds.
36x36 in. x 10 ft., Pond, 2 heads, A-1.
40x40 in. x 11 ft., Putnam, 1 head.
48x38 in. x 12 ft., Pond, 1 head, good.
60x60 in. x 18 ft., Cinci., 3 heads, A-1.

BORING

- 42 in., Bullard, plain table, 1 swivel head, 1 turret head, 4 chuck jaws, used less than one year.

GEAR CUTTERS.

- 36 in., Gleason, gear planer, equal to new.
36 in., Becker-B., spur and bevel.
42 in., Gould & E., spur only.

- Binsse No. 5, hori. boring, drilling & milling machine, p. c. f. to table.
Meadville No. 3, hor. bor'g & drill'g.

MILLS.

- No. 1 Brown & Sharpe, universal.
No. 22 Kempsmith, universal.
No. 2 Putnam, universal.
No. 5-C Becker-Brainard, plain, back geared.
No. 9 Kempsmith, plain, back gd.
No. 2 Cincinnati, plain, back gd.

- No. 9 Brown & Sharpe, plain.
No. 3 Chicago, hand, vertical spindle.
Whitney, hand miller.
No. 1 Pratt & Whitney, hand.
No. 12 Brown & Sharpe, plain, new.
No. 3 Becker-B., vert., rotary table.
No. 3 Burr, keyseat milling machine.

SCREW MACHINES.

- 1 in., Cleveland, automatic.
1 in., Hartford, automatic.
1 $\frac{1}{2}$ in., Hartford, automatic.
2x24 in., Jones & Lamson.
Brown & Sharpe No. 2, automatic, practically new.

- 3 Brown & S. No. 2, automatic, 1895 pattern, good working order.
Brown & S. No. 9, automatic, new.
3 Brown & S. No. 00, automatic, new.
17 hand screw mches., various sizes.
Large stock of turret lathes.

DRILLS.

- 4 spindle, Reddington, with chucks.
3 spindle, Sigourney, with chucks.
2 spindle, Foote-Burt, adjustable.
6 spindle, Foote-Burt, adjustable.
4 spindle, Henry & Wright.

- 6 spindle, Foote-Burt, cir., 1 in. holes.
Prentice, suspension, with over-head works, for boiler plate.
Dallet, portable, complete.
Also other drills, 20 to 42 in. Write.

SHAPERS.

- 15 in., Walcott, geared.
16 in., Ohio, crank.
20 in., Kelly, back geared.

- 24 in., Cincinnati, back geared.
26 in., Walcott, triple geared.
24 in., Walcott, triple geared.

MISCELLANEOUS.

- Bolt cutter, Standard, 1 in.
Bolt cutter, National, 2 $\frac{1}{2}$ in.
Bolt cutter, Adams, 3 in.
Bolt header, Burdick, 4 in.
Borer, car wheel, Niles, 42 in.
Bulldozer, No. 5 Williams & White.
Bulldozer, No. 6 Williams & White.
Cutter grinder, No. 1 Cincinnati.
Cutting-off machine, P. & W., 2 in.
Cutting-off machine, H. & R., 4 in.
Hammer, Bradley, 25 lb.
Hammer, L. & A., 60 lb.
Hammer, drop, 1,000 lbs.
Keyseater, No. 3 Baker Bros., fine.
Keyseater, No. 2 Mitts & M., good.

- Nut taper, Acme, 6 sp., 2 in., good.
Pipe machine, Bignal & K., 3 in.
Pipe machines, Nos. 7 & 9 Jarecki.
Press, No. 75 Crosby, straight sided.
Press, power, No. 18 Bliss.
Press, power, No. P G 5 Ferracute.
Press, power, No. 3 V. & O.
Press, power, No. 2 $\frac{1}{2}$ V. & O.
Punch & shear, Cleve., style E, 1 $\frac{1}{2}$ x1.
Punch & shear, No. 4 Cinci., 4 $\frac{1}{2}$ in.
Punch & shear, No. 7 Long & A., double end.
Slotted, Niles, 12 in., equal to new.
Wheel press, hydraulic, 40 ton.
Wheel press, hydraulic, 200 ton.

SECOND-HAND MACHINERY

FOR SALE BY

Niles-Bement-Pond Company . . . 111 Broadway, New York.

LATHES.

- No. 4 Stark, bench, compound, slide rest.
No. 4 Rivett, compound, slide rest.
No. 3 Pratt & Whitney, bench, comp. slide rest, grinding attachment.
13 in. x 6 ft., Pratt & Whitney, rise and fall and taper.
14 in. x 5 ft., Putnam, compound and taper.
14 in. x 6 ft., Prentiss, compound and taper.
14 in. x 6 ft., Fitchburg, rise and fall and taper.
14 in. x 6 ft., Hendey, comp. rest.

TURRET MACHINERY.

- 1 in. capacity, No. 00 Garvin, wire fd.
1 in. capacity, No. 1 Pratt & W., wire feed.
1 in. capacity, No. 2 Pratt & W., wire feed.
1 in. capacity, No. 2 Warner & S., wire feed.
1x10 in., Pratt & W., new model, wire feed.
1½ in. capacity, No. 3 Bardons & O., wire feed, friction head, power feed to turret.
1½ in. capacity, No. 3 Pratt & W., wire feed, friction head, power feed to turret.
1½ in. capacity, No. 3 Pratt & W., wire feed, friction head, power feed to turret.
2x24 in., Warner & Swasey, hollow hexagon turret.
2x24 in., Jones & Lamson, flat turret.
24 in., Conradson, turret lathe.
24 in., Gisholt, turret lathe.

PLANERS AND SHAPERS.

- 16x16 in. x 4 ft., Pratt & W. planer.
17x17 in. x 4 ft., Whitcomb planer.
24x24 in. x 6 ft., Putnam, 110 v. motor, good as new.

DRILLS.

- 13 in., motor drive, 110 v., friction.
28 in., Snyder, sli. hd., bk. gr., pr. fd.
30 in., Gould & E., slid'g head, back gear, power feed.
2½ ft., Gang, radial.
3 ft., Morris, radial.
5 ft., Niles, semi-universal, radial.
5 ft., Niles, full universal, radial.
6 ft., Niles, semi-universal, radial.

MILLING MACHINES.

- No. 1 American, plain.
No. 3 Becker-B., new model, plain.
No. 5-B, vertical, with rotary.

MISCELLANEOUS.

- Belt lacing machine, 6 in.
Cold saw, No. 11 Higley.
Disc grinder, No. 3 Besley.
Hammer, compact, 100 lb., Bradley.
Keyseater, No. 2 Mitts & Merrill.
Splitting shear, 4 in. capacity, No. 3 Long & Alistatter.

- Keyseater, No. 2 Davis.
Turret borer, 36 in., No. 2 Brown & Sharpe.
Vertical mill, 37 in., Niles.
Vertical mill, 51 in., Niles.
Vertical mill, 72 in., Niles.
Vertical mill, 21 ft., Pond.

WANTED BY

W. H. Kiblinger Co..

Auburn, Ind.

Lathe, 28 inch or over, with short bed as possible, in good condition, for plain work.

SECOND-HAND MACHINERY

FOR SALE BY

National Machine Tool Co.,

Cincinnati, O.

FLAT TURRET LATHE.

3x36 in. Jones & Lamson flat turret lathe, in use about six months, with full complement of tools for bar work, including automatic die and chasers. Used just long enough for all bearings to be in smooth running condition. Will sell at substantial reduction for quick sale at spot cash.

FOR SALE BY

A. D. White Machinery Co.,

19-23 S. Jefferson St., Chicago.

LATHES.

16 in. x 5 ft., Star, hol. spidle., chuck.
13 in. x 8 ft., Fay & Scott, hol. spidle.,
compound rest and 7 in. chuck.
14 in. x 6 ft., Flather, hollow spindle,
compound rest, 10 in. scroll chuck.
15 in. x 6 ft., Prentice, hollow spidle.,
compound rest, 10 in. scroll chuck.

16 in. x 6 ft., American, hollow spidle.,
compound rest, power cross feed.
18 in. x 8 ft., Fitchburg, solid spindle,
plain rest, power cross feed.
20 in. x 12 ft., Davis & E., hol. spidle.,
compound rest, power cross feed.
36 in. x 28 ft., Putnam, cp. r., trip. gd.

PRESSES.

No. 1 Stiles, solid back.
No. 2 R. & K., dbl. crank, inclinable.
No. 3 R. & K., dbl. ck., straight side.

No. 4 Stiles, open back, inclinable.
No. 20 Wold, open back.
No. 95 Stiles & Parker, dbl. ck., s. s.

MILLING MACHINES.

No. 6 Brown & Sharpe, plain.
No. 2 Brown & Sharpe, plain.

No. 1 Davis & Egan, plain.
No. 1. Pratt & Whitney, plain.

FOR SALE BY

Wm. C. Johnson & Sons Machinery Co.,

210-212 Washington Ave.

St. Louis, Mo.

LATHES.

16 in. x 8 ft., screw cutting.
18 in. x 8 ft., Blaisdell.
21 in. x 10 ft., Fitchburg, with turret.

24 in. x 14 ft., Rahn & Carpenter.
32 in. x 18 ft., Lowell.

PLANERS.

10x10x24 in., bench planer.
24x24 in. x 6 ft., Whitcomb planer.

48x48 in. x 20 ft. planer, 4 heads.

AIR COMPRESSORS.

8x8 in., vertical, belt driven.
8x8x12 in., Rand, steam driven.

18x20x30 in., Ingersoll.
20x20 in. and 13½ x 24 in., Norwalk.

PUNCHES AND SHEARS.

Shear, angle, No. 3 Hilles & Jones,
on turntable, for 6x6x1 in. angles,
motor driven.
Punch, single end, 8 in. throat, cap.
 $\frac{1}{4}$ in. with shears.
Punch and shear, single end, 6 in.
throat, cap. $\frac{1}{2}$ in. $\frac{1}{2}$.

Punch and shear, double end, cap.
 $\frac{1}{2}$ in. $\frac{1}{2}$.
Punch and shear, No. 14 Williams-
White, 25 in. throat, cap. $\frac{1}{2}$ in. 1,
motor driven.
Punch and shear, No. 15 Williams-
White, 36 in. throat, cap. 15-16 in. $\frac{1}{2}$.

MISCELLANEOUS.

Compression riveter, Allen, capacity
1 in. rivets.
Crane, Curtis & Co., 2 ton capacity,
with air lift, 30 ft. span.
Hoist, triplex, Yale & Towne, 1 ton.
Hoist, triplex, Yale & Towne, 3 ton.
Hoist, triplex, Yale & Towne, 8 ton.
Hoist, Peerless, Harrington, 4 ton.
Jaw riveter, Allen, 25 in. reach, cap.
1 in. rivets.

Jib crane, $\frac{1}{2}$ ton capacity.
Jib crane, 2 ton, 14 ft.
Jib crane, 2 ton, 20 ft.
Traveler, under-hung, hand, 2 ton
capacity, 30 ft. bridge.
Traveler, under-hung, hand, 7½ ton
capacity, 26 ft. bridge.
Yoke riveter, Boyer, 45 in. reach, cap.
1 in. rivets.

J. J. I.
9 in.
13 in.
14 in.
15 in.
16 in.
chan
16 in.
18 in.
20 in.
21 in.
24 in.
26 in.
28 in.
16x16
20x20
24x24
24x24
head
26x26
to n
27x27
30x30

10 in.
16 in.
18 in.

18 in.
22 in.
No. 2
Stand

3 ft.
4 ft.

Car w
Drive

24 in.
12 in.
16 in.

Punc
Punc
Punc

Cutt
Drill
Drill
Ham
Mot
Pulle
Slopp
Tool

SECOND-HAND MACHINERY

FOR SALE BY

J. J. McCabe,

14 Dey St., New York City.

LATHES.

9 in. x 3 ft., Brown & S., universal.
13 in. x 6 ft., Sebastian, comp. rest.
14 in. x 6 ft., Hendey, quick change.
15 in. x 6 ft., Young, compound rest.
16 in. x 6 ft., Schellenbach, quick
change.
16 in. x 8 ft., Putnam.
18 in. x 6 ft., New Haven.
20 in. x 8 ft., Bullard, with chuck.
21 in. x 10 ft., Putnam.
24 in. x 12 ft., Flather, with chuck.
26 in. x 16 ft., Rahn.
28 in. x 12 ft., Standard.

28 in. x 14 ft., Schumacher & Boye,
quick change.
33 in. x 14 ft., Fifield, triple geared.
40 in. x 18 ft., Putnam, triple geared.
42 in. x 14 ft., quick change, triple
geared.
46 in. blocked 32 in. x 18 ft., triple
geared.
52 in. x 18 ft., Putnam, triple geared.
52 in. x 24 ft., Fifield, triple geared.
60 in. x 24 ft., Standard, triple geared.
78 in., double driving wheel lathe.
86 in. x 18 ft., Bement, triple geared.

PLANERS.

16x16 in. x 4 ft., Whitcomb, crank.
20x20 in. x 4 ft., Stoever, auto. feeds.
24x24 in. x 6 ft., Gray, 1 head.
24x24 in. x 8 ft., Lathe & Morse, 1
head.
26x26 in. x 6 ft., Gray, 1 head, equal
to new.
27x27 in. x 6 ft., Ohio, 1 head.
30x30 in. x 8 ft., Niles, 1 head.

30x30 in. x 10 ft., Bement, 2 heads.
30x30 in. x 12 ft., Newark, 1 head.
36x36 in. x 10 ft., Putnam, 1 head.
38x38 in. x 18 ft., Gray, 4 heads.
40x40 in. x 12 ft., Whitcomb, 2 heads.
42x42 in. x 18 ft., Miles, 2 heads.
48x48 in. x 16 ft., Gray, 4 heads.
54x51 in. x 16 ft., Bement, 2 heads (1
on side.)

SHAPERS.

10 in., New Haven, crank.
16 in., Hendey, friction.
18 in., Prentiss, crank.

20 in., Gould & Eberhardt, crank.
24 in., Smith & Mills, crank.
26 in., triple geared.

GEAR CUTTERS.

18 in., Brown & S., spur and bevel.
22 in., Gould & E., spur and bevel.

36 in., Fellows, spur, gear shaper, for
heaviest duty.

MILLING MACHINES.

No. 2 Cincinnati, universal.
Standard, medium size, plain.

No. 1 Garvin, Lincoln.
Oesterlein, largest size, universal.

RADIAL DRILLS.

3 ft., Baush, automatic feeds.
4 ft., Niles, tapping attachment.

5 ft., Gang Co., tapping attachment.

RAILROAD TOOLS.

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Planer, spiral, 48 in. x 18 ft., Gray.

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20 in. x 7 ft., Bullard, combined stud
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Punch, 15 in., Cleveland.
Punch, 30 in., weight 15,500 lbs.
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Drill, 4 spindle, Jones & Lamson.
Drill, 20 in., Barnes, wheel and lever.
Hammer, power, 350 lbs., Beaudry.
Motor, 20 h. p., Thompson.
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Slotted, 11 in. stroke, Betts.
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